

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

1. (currently amended) An image processing unit (~~100,200,300~~) for computing a sequence of output images on basis of a sequence of input images, comprising:
  - a motion estimation unit (~~102~~) for computing a motion vector field on basis of the input images, the motion vector field comprising a first motion vector belonging to a first group of pixels and a second motion vector belonging to a second group of pixels;
  - a quality measurement unit (~~104~~) for computing a value of a quality measure for the motion vector field;
  - an interpolation unit (~~106~~) for computing a first one of the output images by means of interpolation of pixel values of the input images, the interpolation being based on the motion vector field, wherein the interpolation unit is arranged to perform a motion compensated interpolation of the pixel values of the input images on basis of the motion vector field, if the value of the quality measure is lower than a predetermined threshold and is arranged to perform an alternative interpolation of the pixel values of the input images, if the value of the quality measure is higher than the predetermined threshold;  
and
  - control means (~~108~~) to control the interpolation unit (~~106~~) on basis of the quality measure, characterized in that the quality measurement unit (~~104~~) is arranged to compute the value of the quality measure on basis of a maximum difference between the first motion vector and the second motion vector.
2. (currently amended) An image processing unit (~~100,200,300~~) as claimed in claim 1, characterized in that the first group of pixels is a neighboring group of pixels of the second group of pixels.

3. (canceled)

4. (currently amended) An image processing unit (~~100,200,300~~) as claimed in claim ~~31~~, characterized in that the alternative interpolation comprises a non-motion compensated interpolation.

5. (currently amended) An image processing unit (~~100,200,300~~) as claimed in claim ~~31~~, characterized in that the alternative interpolation comprises a replication of the pixel values of the input images.

6. (currently amended) An image processing unit (~~100,200,300~~) as claimed in claim 2, characterized in that the quality measurement unit (~~104~~) is arranged to compute the value of the quality measure on basis of a maximum difference between the horizontal component of the first motion vector and the horizontal component of the second motion vector.

7. (currently amended) An image processing unit (~~100,200,300~~) as claimed in claim 2, characterized in that the first group of pixels is located horizontally from the second group of pixels.

8. (currently amended) An image processing unit (~~100,200,300~~) as claimed in claim ~~31~~, characterized in that the predetermined threshold is an adaptive threshold.

9. (currently amended) An image processing unit (~~100,200,300~~) as claimed in claim 8, characterized in that the adaptive threshold is based on match errors being computed for the first and second motion vectors.

10. (currently amended) An image processing apparatus (~~400~~) comprising:  
- receiving means (~~402~~) for receiving a signal corresponding to a sequence of input images; and

- an image processing unit ~~(100,200,300)~~ for computing a sequence of output images on basis of the sequence of input images, as claimed in claim 1.

11. (currently amended) An image processing apparatus ~~(400)~~ as claimed in claim 10, characterized in further comprising a display device ~~(406)~~ for displaying the output images.

12. (currently amended) An image processing apparatus ~~(400)~~ as claimed in claim 11, characterized in that it is a TV.

13. (currently amended) A method of computing a sequence of output images on basis of a sequence of input images, comprising:

- computing a motion vector field on basis of the input images, the motion vector field comprising a first motion vector belonging to a first group of pixels and a second motion vector belonging to a second group of pixels;

- computing a value of a quality measure for the motion vector field;

- computing a first one of the output images by means of interpolation of pixel values of the input images, the interpolation being based on the motion vector field, wherein the computing the first one of the output images by means of interpolation of pixel values of the input images comprises performing a motion compensated interpolation of the pixel values of the input images on basis of the motion vector field, if the value of the quality measure is lower than a predetermined threshold and performing an alternative interpolation of the pixel values of the input images, if the value of the quality measure is higher than the predetermined threshold; and

- controlling the interpolation of pixel values on basis of the quality measure, characterized in that the value of the quality measure is computed on basis of a maximum difference between the first motion vector and the second motion vector.

14. (new) An image processing unit as claimed in claim 9, wherein the value of the adaptive threshold is relatively high when the match errors being computed for the first and second motion vectors are relatively low.

15. (new) An image processing unit for computing a sequence of output images on basis of a sequence of input images, comprising:

- a motion estimation unit for computing a motion vector field on basis of the input images, the motion vector field comprising motion vectors, wherein each of the motion vectors belongs to a group of pixels;
- a quality measurement unit for computing a value of a quality measure for the motion vector field;
- an interpolation unit for computing a first one of the output images by means of interpolation of pixel values of the input images, the interpolation being based on the motion vector field; and
- control means to control the interpolation unit on basis of the quality measure, characterized in that the quality measurement unit is arranged to compute the value of the quality measure on basis of the maximum of the differences between the motion vectors.

16. (new) An image processing unit as claimed in claim 15, wherein the group of pixels of one of the motion vectors is a neighboring group of pixels of the groups of pixels of the rest of the motion vectors.